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Relationship between Circuit and Cutset Subspaces; 4.6 Orthogonality of Circuit and Cutset Subspaces; 4.7 Further Reading; 4.8 Exercises; 4.9 References; 5 DIRECTED GRAPHS

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6.9 The Number of Directed Spanning Trees in a Directed Graph 6.10 Adjacency Matrix; 6.11 The Coates and Mason Graphs; 6.12 Further Reading; 6.13 Exercises; 6.14 References; 7 PLANARITY AND DUALITY; 7.1 Planar Graphs; 7.2 Euler's Formula; 7.3 Kuratowski's Theorem and Other Characterizations of Planarity; 7.4 Dual Graphs; 7.5 Planarity and Duality; 7.6 Further Reading; 7.7 Exercises; 7.8 References; 8 CONNECTIVITY AND MATCHING; 8.1 Connectivity or Vertex Connectivity; 8.2 Edge Connectivity; 8.3 Graphs with Prescribed Degrees; 8.4 Menger's Theorem; 8.5 Matchings

8.6 Matchings in Bipartite Graphs 8.7 Matchings in General Graphs; 8.8 Further Reading; 8.9 Exercises; 8.10 References; 9 COVERING AND COLORING; 9.1 Independent Sets and Vertex Covers; 9.2 Edge Covers; 9.3 Edge Coloring and Chromatic Index; 9.4 Vertex Coloring and Chromatic Number; 9.5 Chromatic Polynomials; 9.6 The Four-Color Problem; 9.7 Further Reading; 9.8 Exercises; 9.9 References; 10 MATROIDS; 10.1 Basic Definitions; 10.2 Fundamental Properties; 10.3 Equivalent Axiom Systems; 10.4 Matroid Duality and Graphoids; 10.5 Restriction, Contraction, and Minors of a Matroid

10.6 Representability of a Matroid

Sommario/riassunto

This adaptation of an earlier work by the authors is a graduate text and professional reference on the fundamentals of graph theory. It covers the theory of graphs, its applications to computer networks and the theory of graph algorithms. Also includes exercises and an updated bibliography.